# Week 1 Exercises

Nelson Tran

July 9, 2023

## Exercise 1

Assign 10 to the variable x. Assign 5 to the variable y. Assign 20 to the variable z.

```
#your code below
x <- 10
y <- 5
z <- 20
```

## Exercise 2

Show that x is less than z but greater than y.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

```
#your code below
(z > x)&(x > y)
```

```
## [1] TRUE
```

## Exercise 3

Show that x and y do not equal z.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

```
#your code here
(x!=z)&(x!=z)
```

```
## [1] TRUE
```

## Exercise 4

Show that the formula `x + 2y = z`.

**Note: your output must be a SINGLE boolean**

```
#your code below

z == (x + (2*y))
```

```
## [1] TRUE
```

## Exercise 5

I have created a vector (test_vector) of integers for you. Determine if any of x, y, or z are in the vector.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

```
test_vector <- c(1,5,11:22)
#your code below

(z %in% test_vector) | (y %in% test_vector) | (x %in% test_vector)
```

```
## [1] TRUE
```

## Exercise 6

Show which value is contained in the test vector. To do this you will need to create an element-wise logical vector using operators. `x == vector`. Once you have done that you will need to use slicing to return all indices that have matches. **Note: your output should be two integers**

```
#your code below

test_vector [(z == test_vector) | (y == test_vector) | (x == test_vector)]
```

```
## [1]  5 20
```